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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 09/944,969
Filing Date: August 30, 2001
Appellant(s): CHEN, KAY-YUT

—————————————
Kay-Yut Chen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/8/2009 appealing from the Office action

mailed 1/7/2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. However the following **New Grounds of Rejection** has been added.

NEW GROUND(S) OF REJECTION

Claims 1-9, 18-21 and 23 under 35 U.S.C. 101 (rejection re-instated) based on Supreme Court precedent, and recent Federal Circuit decisions.

Claims 10-17 and 22 under 35 U.S.C. 101 because the claimed invention encompasses non-statutory subject matter.

Claims 10-17 and 22 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Chaturvedi et al. "Synthetic Economies: The Application of Distributed Interactive Computing Environments for Policy and Management Decision Making", Institute for Defense Analysis (IDA), September 1997.

Chaturvedi and Mehta, "Simulations in economics and management." Communications of the ACM, March 1999.

Honarvar et al. (US Pat. NO. 6,405,173).

Sugges, "The Use of Computerized Business Games to Simulate business Behavior Under Different Policies", IEEE Winter Simulation Conference, 1979.

Fischbacker"z-Tree--Zurich Toolbox for Readymade Economic Experiments - Experimenter's Manual", Institute for Empirical Research in Economics, University of Zurich, September 1999.

Jepsen, "How Programming Languages Evolve", IT Pro, November/December, 1999.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

NEW GROUND(S) OF REJECTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-9, 18-21 and 23 are rejected under 35 U.S.C. 101 based on

Supreme Court precedent, and recent Federal Circuit decisions.

For a process to be patentable subject matter under § 101 the process must (1) be tied to another statutory class of invention (such as a particular apparatus) or (2) transform subject matter to a different state or thing. See Diamond v. Diehr, 450 US 175, 184 (1981); Parker v Flook, 437 US 584, 588 n9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 US 780, 787-88 (1876). If neither of these requirements is met by the claim, the method is not a patent eligible process. To qualify under § 101 as a statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

In the present case, none of method (process) claims 1-9 or 18-23 recite a step

transforming subject matter to a different state or thing or positively recite a sufficient tie

to another statutory class of invention, such as a particular apparatus. Mere recitation

of an apparatus or article in the preamble of a claim does not transform an unpatentable

process into a patentable process (see *Ex parte Langemyr*, BPAI Appeal 2008-1495,

Decided May, 2008), as in for example, the preamble of independent claims 1 and 8

which recite Thus, the invention as claimed is ineligible for patenting and therefore

nonstatutory subject matter under 35 U.S.C. 101.

Claims 10-17 and 22 are rejected under 35 U.S.C. 101 because the claimed

invention encompasses non-statutory subject matter.

Claims to apparatus without structure and comprising solely software modules

unrelated to any computer-readable media or memory encompass computer programs

per se, which are non-statutory under 35 U.S.C. 101. Further, lacking structure, it is

indefinite as to whether claims to an apparatus comprising software modules are

product or process claims, and therefore indefinite as to which statutory class the

invention belongs, as is indicated in the rejection under 35 U.S.C. 112, 2nd paragraph,

below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

Claims 10-17 and 22 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention. Claims to apparatus without

structure and comprised solely of software modules unrelated to any computer readable

media or memory are indefinite as to which statutory class the invention belongs.

(PREVIOUS GROUNDS OF REJECTION)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Chaturvedi et al (with Richard White, "Synthetic Economies: The Application of

Distributed Interactive Computing Environments for Policy and Management

Decision Making", Institute for Defense Analysis, September 1997, hereinafter

"Chaturvedi/IDA"; with Mehta, "Simulations in economics and management.

Communication of the ACM, March 1999, hereinafter "Chaturvedi/ACM") and

further in view of Honarvar et al (US 6,405,173), Sugges ("The Use of

Computerized Business Games to Simulate business Behavior Under Different

Policies", IEEE Winter Simulation Conference, 1979), and Fischbacker ("z-Tree--

Zurich Toolbox for Readymade Economic Experiments - Experimenter's Manual",

Institute for Empirical Research in Economics, University of Zurich, September

1999).

Chaturvedi (/ACM and /IDA) disclose the SEAS (Synthetic Economy for Analysis

and Simulation) methods and system developed at Purdue University for interactive

modeling and simulation of business policy management and economic behavior,

mimicking real-time markets in a laboratory simulation populated by agents human and

artificial. Chaturvedi is a named inventor on the patent to Mehta et al (US Pat.

6,931,365) as cited and previous applied but disqualified by Appellant's Declaration of

earlier invention under 37 CFR 1.131. *Mehta et al* refers expressly to a "synthetic

environment for analysis and simulation," with claims directed to such; however, Mehta

et al does not explicitly, by name, reference the work of "SEAS". However the strong

correlation between the "SEAS" literature cited herein, and the disclosure by Mehta et

al, there is not sufficient evidence in the patent or application file to construe Mehta et

al as a detailed "product description" of the earlier disclosed SEAS synthetic environment

for analysis and simulation system.

  Honarvar discloses automated methods for simulation and analysis of economic

outcomes of management decisions to improve profitability and maximize customer

value, including analysis and simulation of policy decisions for financial services,

telephone utility companies, banks, and other business types. Sugges teaches early

recognition in the art for simulating business behavior using computerized games to

assess economic impact and behavioral outcomes of players under different business

policies and Fischbacker discloses a script-based, customizable, and interactive

computerized economic/business gaming tool.

  Specifically, with respect to the claims of the instant application:

<u>Claim 1</u>

  Chaturvedi teaches defining a plurality of players including an associated set of

rules defining a possible decision space (/ACM, page 60: "buyers, sellers,

regulators…"); an information set (/ACM, page 60: "customizing the database"); an

outcome function and a payoff function which determine the economic impact of the

business policies defined by the rules (/IDA, Appendix A); however, Chaturvedi does not

expressly teach rules for players defined by a decision-making process tree; nor does

Chaturvedi expressly teach executing the simulation using a scripting language.

It was old and well known in the art of computer programming, specifically logic

programming for automated decision-making making systems, to use decision-trees to

define rules, the familiar if-then-else programming construct being a form of a decision-

tree definition of a rule. Honarvar teaches player (client) rules defined by decision trees

(see Figures 6 and 10 and related discussion) defining client strategies for the business

simulation. It would have been obvious to one of ordinary skill in the art at the time of

the invention to define rules for players using such means as the decision-tree, readily

programmable with a familiar programming construct as this would have provided a

flexible and readily programmable means for defining simple or arbitrarily complex rules

for the defined players of the economic simulation.

Official Notice is taken as old and well known in the art of computer

programming, and specifically in the art of programming for automated economic games

simulation, to use a scripting language to define and execute the simulation. Scripting

languages generally, have long been known to provide adaptability and ease of

implementation for programmers in highly dynamic and customizable programming

environments (see page 71, "Script Doctoring" and "Ultimate Adaptability", by Jepsen,

"How Programming Languages Evolve", IT Pro, November/December, 1999).

Specifically in the art of the present invention, Sugges teaches computerized *business* games used as a research tool to determine how businesses respond to corporate and governmental policies in the context of economies, and Fischbacker teaches the use of a scripting language in a customizable, interactive computerized business game. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement Chaturvedi as a scripted simulation using the suggestion of Sugges and Fischbacker, as this would have provided a well known means to change the "operating functionality at run-time", i.e. customizability, thereby realizing "dynamically reconfigurable environment" as expressly envisioned by Chaturvedi/ACM (page 60, box column 2, 2nd paragraph).

Claims 2 and 3

Chaturvedi teaches a simulation environment for humans and/or automated agents and, as with the present disclosure, does not restrict its use to exclusively human players (/ACM, page 60).

Claim 4

Chaturvedi teaches modifying the set of rules for one or more players and teaches or suggests repeating steps b) to c) (of the method of claim 1 as above).

Claim 5

Chaturvedi teaches providing calibration data for defined players based on empirical sales information (/ACM, page 60, "calibrating the artificial agents' [the defined players] parameters to match that of the real consumers" implying a calibration from empirical sales information based on consumers).

Claim 6

Chaturvedi teaches a plurality of scenarios defining variations on the set of rules associated with the one or more players (), and generating scripts corresponding to the player definition variations.

Claim 7 and 8

In view of the discussion of scripts above for claim 1, Chaturvedi teaches or suggests dynamically assembled simulations based on participant's profiles or on demand, thereby also suggesting "on-the-fly execution" (i.e. interpreted) scripts.

Claim 9

Chaturvedi expressly teaches rules associated with at least one players defining at least one business policy.

Claims 10-17 recite automated apparatus for carrying out the methods of claims 1-9 and are thus similarly rejected for reasons given above.

Claims 18 -20

Chaturvedi teaches or suggests the elements of claim 1 recited in claim 18 as described above for claim 1, and further Chaturvedi teaches a method of evaluating the actions of a human player within a decision environment with other human and/or automated players, inherently determining the players behavioral outcome (the player's actions) resulting from execution of the "codified script", the outcome measured by costs, profits, etc, i.e. economic states.

Claim 21

Chaturvedi teaches providing calibration data for defined players based on

historical data and producing calibration data based on the historical data, wherein the

codified script is translated from the definitions and the calibration data (see /ACM,

page 60).

Claims 22 and 23 further recite steps of retranslating player definitions into

modified scripts and executing the modified strips. Chaturvedi does not expressly teach

modifying the player definitions, retranslating, and determining another behavioral

outcome. However, these steps recite merely the effect of re-running a simulation with

new players (a new plurality of players implies modified player definitions). It would

have been obvious to one of ordinary skill in the art at the time of the invention that to

run a new simulation with new set of players, one would perform the equivalent of

retranslating player definitions into modified scripts and executing the modified strips,

thereby executing the new simulation with the current players of the economic game.

(10) Response to Argument

Appellant argues none the prior art Chaturvedi/ACM or Chaturvedi/IDA, alone or

in combination with Fischbacher or Sugges teach or suggest *translating player*

definitions defining a plurality of players and an associated set of rules into a codified

script as recited in claims 1-9 (App. Br. 6), claims 10-17 (App. Br. 9), and claims 18-23

(App. Br. 10), arguing instead that Chaturvedi/ACM and /IDA and the prior art use only

predefined programs and not *scripts translated from player definitions* (App. Br. 6-7).

Examiner respectfully disagrees: The related works of Chaturvedi/ACM and

Chaturvedi/IDA were not alone used to teach *translating player definitions from scripts.*

Chaturvedi/ACM teaches defining a plurality of players including an associated set of

rules defining a possible decision space (see Chaturvedi/ACM, page 60: "buyers,

sellers, regulators…"). Fischbacker was used to teach the use of a scripting language

in a *customizable*, *interactive* computerized business game. Sugges was used solely to

show that computerized business games are long known to be used as a research tool

to determine how businesses respond to corporate and governmental policies in the

context of economies, a teaching directly in the art of the invention, and Jepsen was

used an authoritative reference to the assertion by Official Notice that scripting

languages, generally, have long been known to provide adaptability and ease of

implementation for programmers in highly dynamic and customizable programming

environments (see page 71, "Script Doctoring" and "Ultimate Adaptability", by Jepsen,

"How Programming Languages Evolve", IT Pro, November/December, 1999).

Applying a known technique to known device, method, or product that is ready

for improvement is obvious if the particular known technique was recognized as part of

the ordinary capabilities of one skilled in the art, who would have been capable of

applying this known technique to the known device, method, or product, and the results

would have been predictable to one of ordinary skill in the art. *KSR International Co.*

v.Teleflex Inc. (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007). MPEP ¶ 2141 [R-6].

In the present case, Chaturvedi provides a known method ready for the

improvement of a scripting language as in Fischbacker. Jepsen shows that such

scripting adaptability was well known to one of ordinary skill in the art of programming

who would have been capable of implementing scripting in dynamic and customizable

programming environments. Therefore, Fischbacker, being one such programming

environment directed expressly to simulation for encoding scripts to create a

customizable, interactive business game, applied as an improvement to Chaturvedi,

would have predictability resulted in the improved and "dynamically reconfigurable

environment" as expressly envisioned by Chaturvedi (/ACM, page 60, box, column 2).

The test for obviousness is not whether the features of a secondary reference

may be bodily incorporated into the structure of the primary reference; nor is it that the

claimed invention must be expressly suggested in any one or all of the references.

Rather, the test is what the combined teachings of the references would have

suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981). The combined teachings of the references clearly suggest to

one of ordinary skill in the art at the time of the invention, that the combination of a

scripting language to *translate player definitions defining a plurality of players and an*

associated set of rules into a codified script was a known technique recognized by those

of ordinary skill at the time of the invention who were capable of its application, and

would have predictably resulted in increased flexibility and speed of conducting "large-

scale experiments and simulations where interactions among agents (players) need to

be studied (Chaturvedi/ACM, page 60, box column 2).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the

Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/Dave Robertson/

Examiner, Art Unit 2121

Conferees:

/Scott L Jarrett/

Primary Examiner, Art Unit 3624

Mr. Vincent Millin/vm/

Appeals Practice Specialist

A Technology Center Director or designee must personally approve the

new ground(s) of rejection set forth in section (9) above by signing below:

/Wynn W. Coggins/

Director, TC 3600